ABSTRACT

The method and system of the present inventions provides a new approach for selecting frequencies comprising a minimal or limited frequency data set for imaging leading to an order of magnitude decrease in computation resources. Seismic data are acquired and transformed a frequency domain. The data may be gathered in any manner. A plurality of minimal frequency subsets are formed comprising selected frequencies. The frequencies may be selected so that more frequencies are selected for shallower image positions. The selected frequencies are imaged to form frequency images. The selected frequencies may be individually weighted to assure a full and balanced bandwidth. The frequency images are composited to form an intermediate or final composited migration image.